Mortality Trends for Syphilis

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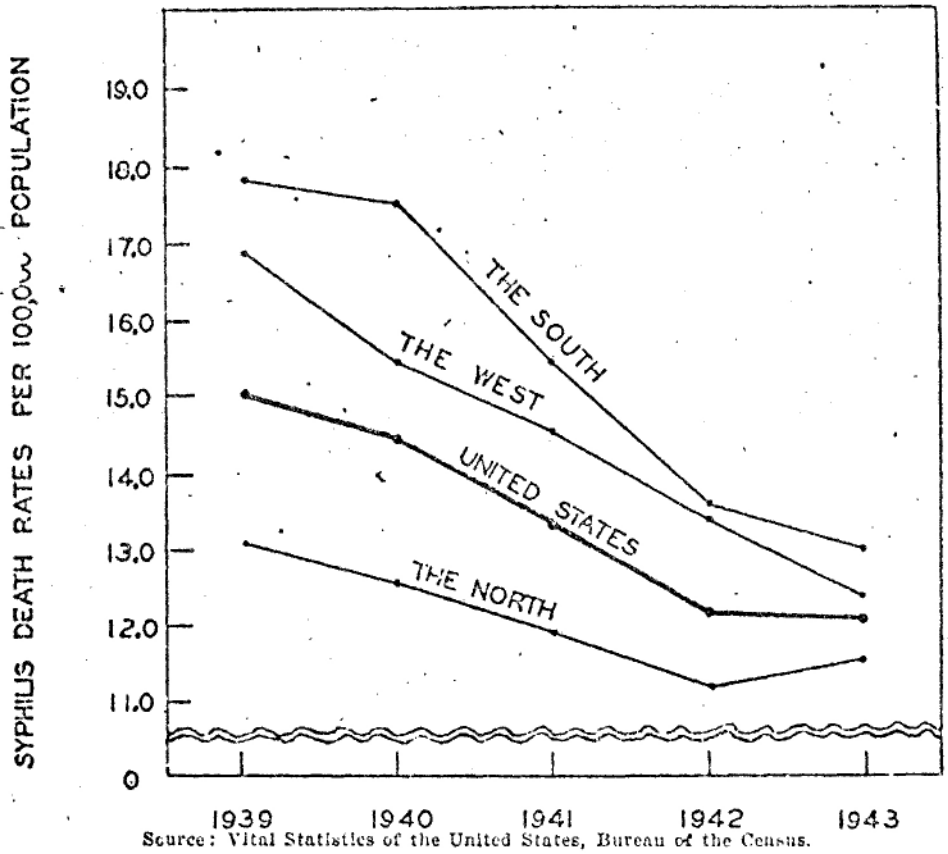
The present communication presents a compilation of data, published by the Bureau of the Census, relating to mortality attributable to syphilis. The trend of death rates from syphilis can be demonstrated through an analysis of statistics released annually giving the number of deaths reported in each calendar year classified according to the International List of Causes of Death. Table 1 gives the syphilis death rates per 100,000 population from 1939 through 1943 for the United States as a whole and for the various regions of the country separately; chart 1 presents the same data graphically. Data for years prior

TABLE 1.—*Number of deaths due to syphilis (all forms) per 100,000 population, for the total United States and regions, 1939–43*

Region	1939	1940	1941	1942	1943
North	13.1	12.6	11.9	11.2	11.6
South	17.8	17.5	16.4	13.6	13.9
West	16.8	15.4	14.6	13.4	12.4
United States	15.0	14.4	13.3	12.2	12.1

Source: Vital Statistics of the United States, Bureau of the Census.

CHART 1.—*Number of deaths due to syphilis (all forms) per 100,000 population, for the total United States and regions, 1939–43*



Source: Vital Statistics of the United States, Bureau of the Census.

Prepared with the assistance of B. E. Carroll, M. A., and Geraldine A. Gleeson, Venereal Disease Division.

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TABLE 2.—*Number of infant deaths due to syphilis per 1,000 live births, for the total United States and regions, 1933–43*

Region	1933	1934	1935	1936	1937	1938	1939	1940	1941	1942	1943
North	0.52	0.46	0.40	0.39	0.38	0.29	0.28	0.24	0.19	0.14	0.12
South	1.23	1.18	1.14	1.26	1.16	1.16	1.03	.99	.79	.58	.46
West	.61	.62	.68	.67	.61	.52	.41	.40	.26	.21	.19
United States	.79	.74	.70	.73	.69	.63	.57	.53	.41	.30	.25

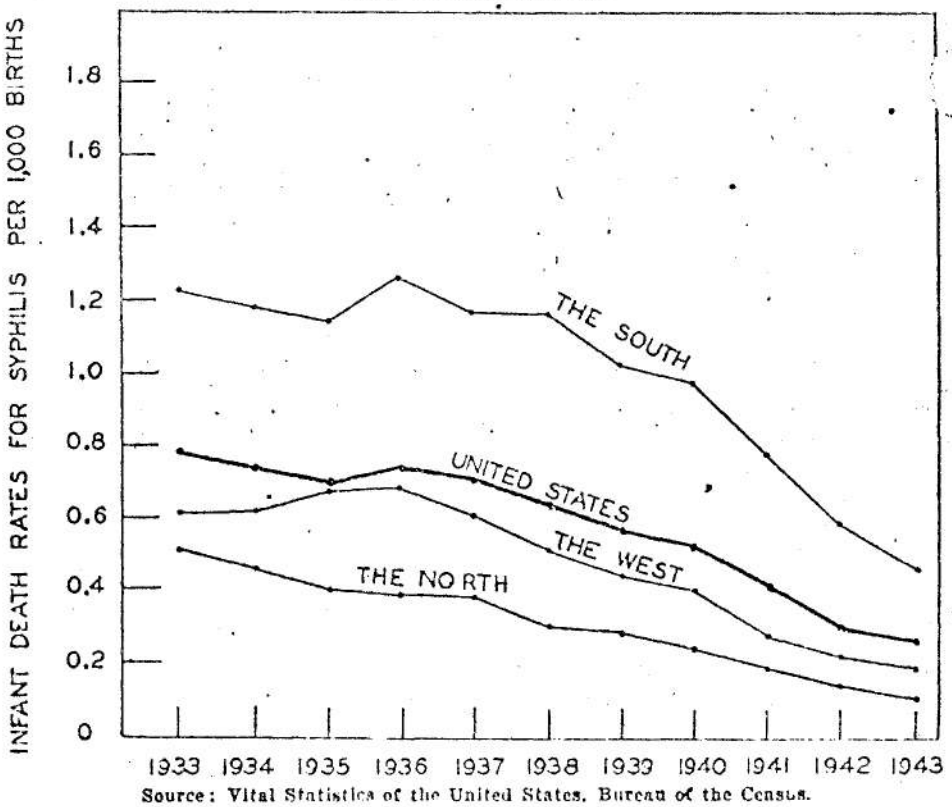
Source: Vital Statistics of the United States, Bureau of the Census.

to 1939 are of doubtful meaning because of changes in the International List of Causes of Death. For instance, aneurysm of the aorta was included with the general nonsyphilitic classification "Aneurysm (except of heart)."

As can be seen from table 1 and chart 1, since 1939 there has been an appreciable and steady decline. The total United States rate dropped from 15.0 in 1939 to 12.1 in 1943, every region of the country contributing to the lowered rates. The southern and western States experienced greater percentage decreases than did the northern States. However, their 1939 rates were considerably higher.

The trend in total syphilis death rates is a summation of the death rates from a number of fatal syphilitic conditions. Of these, separate investigations were made for deaths from syphilis in children under 1 year of age, paresis, and tabes dorsalis. Cardiovascular syphilis was not included because so large a propor-

CHART 2.—*Number of infant deaths due to syphilis per 1,000 live births, for the total United States and regions, 1933–43.*



Source: Vital Statistics of the United States, Bureau of the Census.

TABLE 3.—*Number of deaths due to paresis per 100,000 population, death-registration States of 1910 and the expanding registration area, 1910–43*

Year	Death-registration States of 1910	Expanding death-registration area
1910	5.57	5.57
1911	7.01	6.81
1912	7.40	6.78
1913	7.33	7.00
1914	7.52	7.16
1915	7.81	7.49
1916	8.02	7.33
1917	8.08	7.23
1918	7.85	7.34
1919	6.38	5.75
1920	6.32	5.81
1921	7.01	6.34
1922	7.46	6.63
1923	7.65	6.59
1924	7.15	6.33
1925	6.70	5.82
1926	6.35	5.57
1927	5.54	4.95
1928	5.17	4.60
1929	4.78	4.33
1930	4.33	4.07
1931	4.35	3.93
1932	4.20	3.82
1933	3.92	3.61
1934	3.99	3.80
1935	3.78	3.61
1936	3.50	3.47
1937	3.26	3.23
1938	3.48	3.47
1939	3.59	3.44
1940	3.50	3.36
1941	3.35	3.24
1942	3.39	3.37
1943	3.54	3.54

Source: Vital Statistics of the United States, Bureau of the Census.

tion of it was not so classified prior to 1939 but was included under the title "Aneurysm (except of heart)."

In the compilation of reported infant deaths from syphilis, the data reported from 1933 on were used. The changes in the 1939 revision of the International List of the Causes of Death did not affect the classification of deaths from congenital syphilis. Therefore, the data could be used for the years back to 1933, when the birth and death-registration areas first included the whole country. Prior to that year the data could not be used because the birth and death-registration areas did not coincide. Table 2 and chart 2 present the infant death rates per 1,000 live births from 1933 through 1943. There has been a marked decline in death rates from syphilis for infants under 1 year of age. The rate for the United States as a whole in 1943 was less than one-third that in 1933. The same trend was observed in every region of the country. The greatest decrease in rate occurred in the northern States, from 0.52 in 1933 to 0.12 in 1943. However, looking at chart 2, it can be seen that since 1938 the rates in the southern States have dropped precipitously, although there had been little change in the trend previously. The decline in rates of infant mortality due to syphilis reflects not only improvement in general venereal disease control, but more specifically the preven-

TABLE 4.—*Number of deaths due to tabes dorsalis per 100,000 population, death-registration States of 1910 and the expanding registration area, 1910–43*

Year	Death-registration States of 1910	Expanding death-registration area
1910	2.66	2.66
1911	2.74	2.72
1912	2.60	2.54
1913	2.68	2.62
1914	2.63	2.53
1915	2.72	2.60
1916	2.59	2.35
1917	2.58	2.34
1918	2.55	2.31
1919	2.22	2.01
1920	2.05	1.84
1921	2.00	1.90
1922	2.11	1.82
1923	1.95	1.73
1924	1.94	1.66
1925	1.80	1.30
1926	1.75	1.51
1927	1.53	1.35
1928	1.50	1.31
1929	1.38	1.21
1930	1.29	1.10
1931	1.16	1.00
1932	1.16	.99
1933	1.03	.90
1934	1.11	.91
1935	.85	.74
1936	.93	.78
1937	.81	.69
1938	.74	.64
1939	.70	.60
1940	.65	.56
1941	.62	.50
1942	.53	.44
1943	.57	.47

Source: Vital Statistics of the United States, Bureau of the Census.

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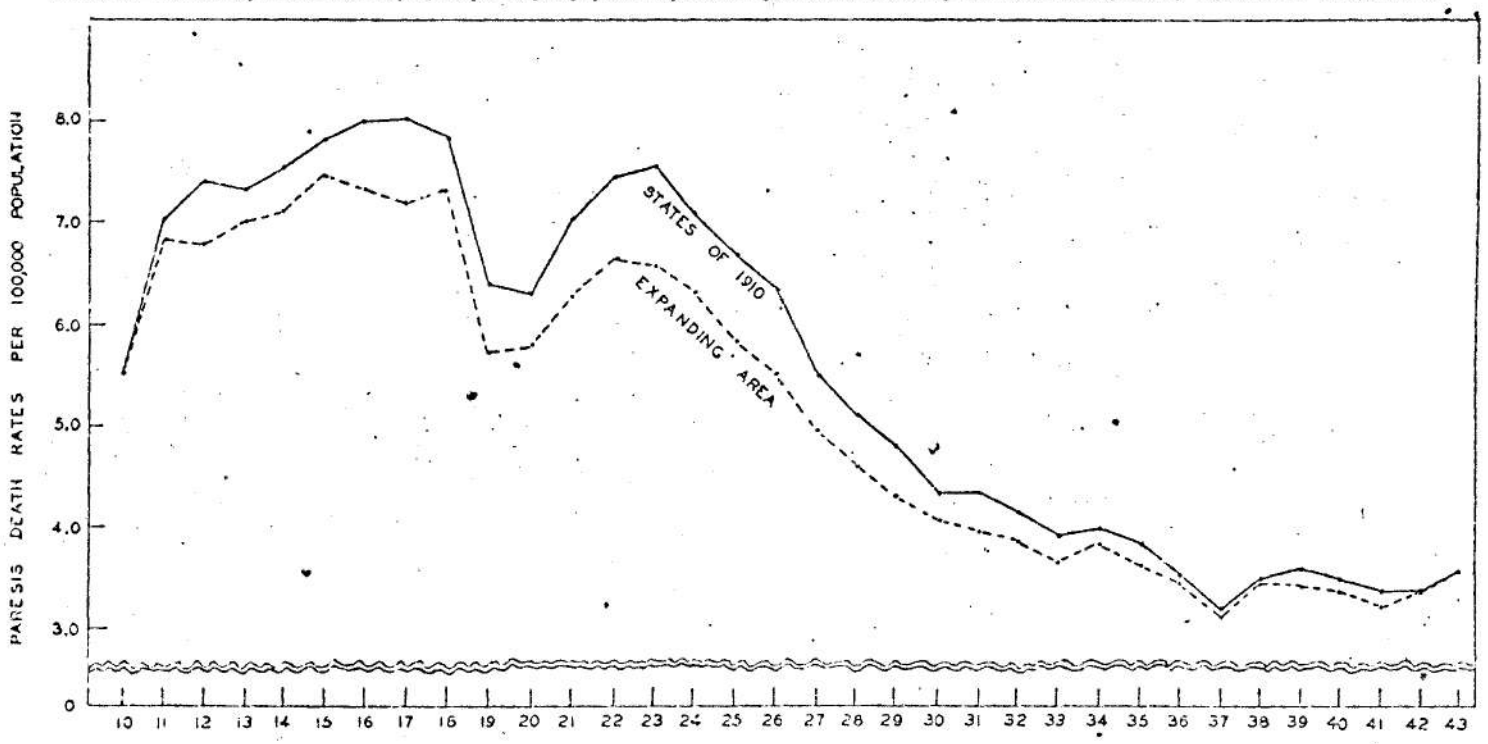
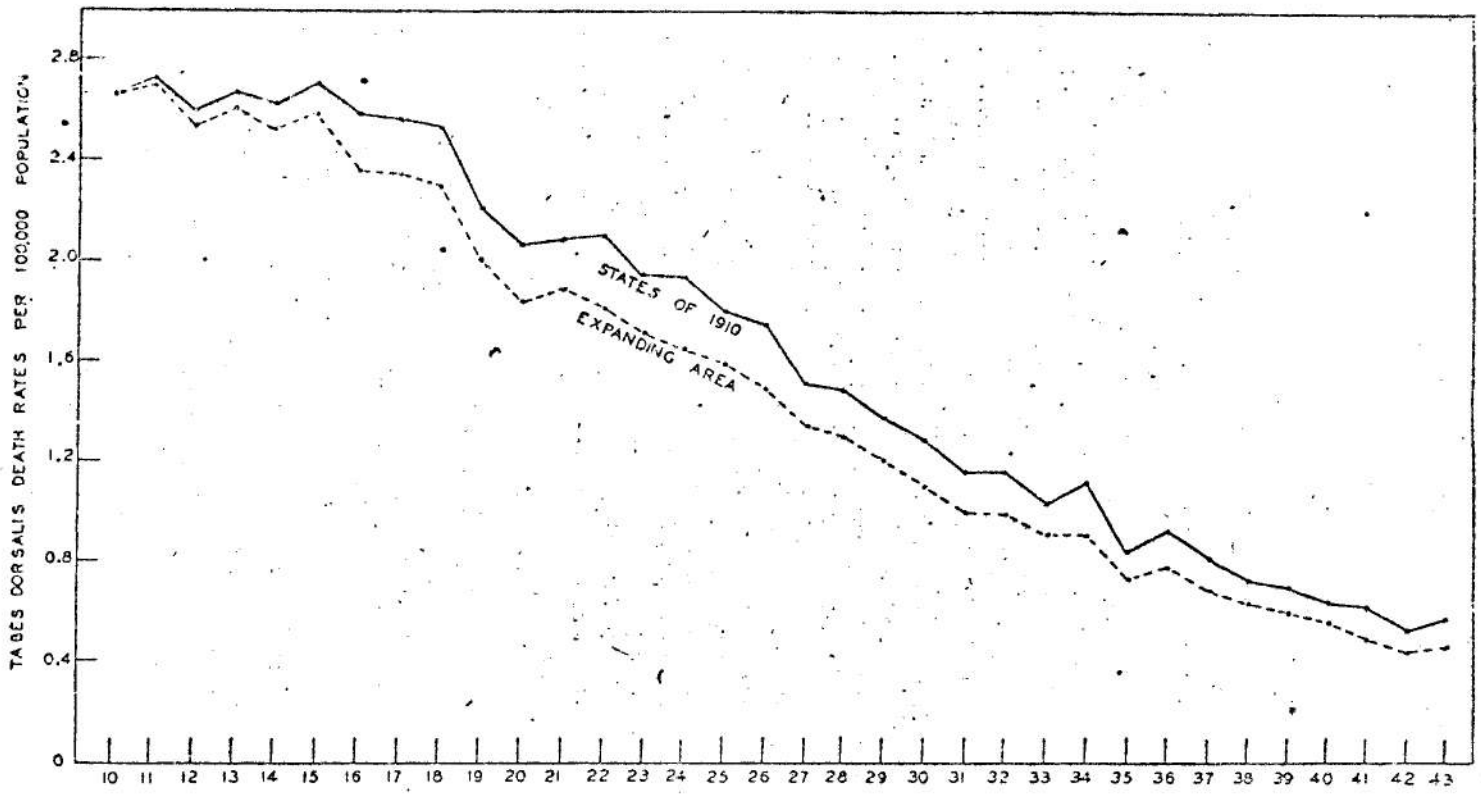


Source: Vital Statistics of the United States, Bureau of the Census.

CHART 4.—*Number of deaths due to tabes dorsalis per 100,000 population, death-registration States of 1910 and the expanding registration area, 1910-43*



Source: Vital Statistics of the United States, Bureau of the Census.

tion of occurrence of congenital syphilis through treatment of syphilis in women during pregnancy and the finding and treating of children under 1 year of age who have congenital syphilis.

The periodic revisions of the International List of the Causes of Death introduced only minor changes into the classification of deaths due to paresis and tabes dorsalis. Furthermore, the inclusion of additional States in the death-registration area from time to time did not materially affect the trend, as is shown by the fact that almost exactly the same pattern was followed by rates calculated for only the original death-registration States of 1910 and those calculated for the expanding death-registration area.

The mortality rates per 100,000 population for paresis rose from 1910 to 1917, dropping abruptly from 1918 to 1919; they then climbed until 1923, although they never again reached the peak of 1917. The sharp decline in 1918 is similar to one which appears in the trend of the death rates for all chronic diseases and which has been reported to be associated with the influenza epidemic.

The upward trend flattened out considerably from 1922 to 1923, and from 1923 to 1937 there was a constant downward trend. Malaria therapy for the treatment of paresic made its appearance in 1922 and may be largely responsible. The rates fell rapidly from 1923 to 1930 and then declined more gradually until 1937. There has been no further lowering of the rates since 1937, the trend line remaining more or less level at about 3.0 to 3.5 per 100,000 population.

The trends observed were quite similar for the States of 1910 and for the expanding death-registration area. For the States of 1910 the rate fell from 7.55 per 100,000 population in 1923 to 3.26 in 1937; for the expanding area the respective rates were 6.59 and 3.23.

The trend line for mortality rates from tabes dorsalis has been continuously downward since 1910, as can be seen from chart 4, which was constructed from the rates per 100,000 population tabulated in table 4 for the period 1910 through 1943. Unlike the trend for death rates from paresis, there has been remarkably little fluctuation, although the same accelerated downward rate was observed at the time of the influenza epidemic in 1918 and 1919. The rate for States of 1910 was 2.66 in 1910 and 0.57 in 1943; in the expanding area of death-registration, the rate fell from 2.66 to 0.47. The tendency toward a low constant rate seen in the data relating to paresis has not been observed in the tabetic death rates.